



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,767	10/22/2003	David William Whitman	A01458	5371
21898	7590	07/11/2006		EXAMINER
ROHM AND HAAS COMPANY PATENT DEPARTMENT 100 INDEPENDENCE MALL WEST PHILADELPHIA, PA 19106-2399			SASTRI, SATYA B	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 07/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/690,767	WHITMAN ET AL.
	<b>Examiner</b> Satya B. Sastri	<b>Art Unit</b> 1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 24 April 2006.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 1-4, 9 and 10 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 5-8 and 11-23 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) 1-23 are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                                       |                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                           | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                                  | Paper No(s)/Mail Date. _____.                                               |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/23/04, 5/24/04</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|                                                                                                                                                       | 6) <input type="checkbox"/> Other: _____.                                   |

## **DETAILED ACTION**

1. This office action is in response to communication mailed on April 24, 2006. *Claims 1-23* are now pending in the application.

2. Applicant's response on restriction requirement has been fully considered but not found persuasive. Claims 1-4 and 9-10 are withdrawn from further consideration as being drawn to a non-elected invention. Restriction requirement is proper for the reasons set forth in the request mailed on March 23, 2006 and thus, the requirement is made FINAL.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. *Claims 19 and 20* are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The scope of claim 19 is unclear because it is not clear whether more than one soluble polymers are present in the composition. Additionally, claim 7 recites 1-40% by wt. of a soluble polymer while claim 20 recites 0-40% by wt. of the soluble polymer.

### ***Claim Rejections - 35 USC § 102 and 103***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. *Claims 5, 6, 11, 15* are rejected under 35 U.S.C. 102(e) as anticipated by Twardowska et al. (US 6,887,931 B2).

Prior art to Twardowska et al. discloses thermosetting inorganic clay nanodispersions comprising an inorganic clay dispersed in an intercalating agent (abstract). The dried intercalated inorganic clay is then mixed with a thermoplastic or thermosetting monomer or resin, which exfoliates some or all layers of inorganic clay. In the case of a thermoset resin, the mixture is cured by contacting with a curative and/or a curing catalyst (column 2, lines 30-38). Examples of monomers that can be used as the curative include acrylic monomers, vinyl monomers etc. (column 5, lines 27-47). The compositions may be cured by heating, contact with ultraviolet radiation, and/or catalyst, or other appropriate means (column 5, lines 13-26). Working examples 1-3 disclose clay intercalated with styrene or unsaturated polyester. A nanocomposite is prepared by curing at elevated temperatures in the presence of benzoyl peroxide. In light of the above,

instant claims are anticipated by the prior art.

8. *Claims 5-8, 11-23* are rejected under 35 U.S.C. 103(a) as being unpatentable over Macqueen et al. (US 6,399,670 B1).

Prior art to Macqueen et al. concerns a coated substrate, a radiation-cured coating wherein the coating comprises a radiation-curable resin, an initiator and a texture producing particles (abstract). The radiation-curable resin may comprise approximately 50-99% by wt. of the pre-cured coating mixture with the pre-cured mixture generally comprising a radiation curable resin and an initiator. The resin may most preferably, include acrylic monomers and oligomers (column 5, lines 25-30). Radiant energy can be transferred through wave phenomenon and subatomic particle movement. Most preferred forms of radiant energy are ultraviolet (UV) and electron beam energy (column 5, lines 7-20, line 60-65). The initiator may be any initiator assisting or catalyzing the polymerization and may generally be a photoinitiator or photosensitizer useful in amounts of 0.1 to 4 phr (column 6, lines 6-29). The inorganic particles may comprise exfoliated clay in amounts of 10-30%, by wt., of pre-cured coating mixture (column 7, lines 14-16). Additionally, the coating compositions may include 1-50%, by wt. of pre-cured resin, of organic particles such as waxes, guar, gelatin and starch in the compositions. The organic particles may dissolve or partially dissolve into the pre-cured resin at elevated temperatures and thicken the pre-cured mixture upon cooling (column 7, lines 17-40).

The difference between the prior art and the instant invention is that the prior art compositions preferably include a photoinitiator in the compositions.

The prior art teaches the inclusion of 0.1 to 4 phr of photoinitiator in the compositions. The instant specification discloses on page 12, lines 3-7, that "substantially free of photoinitiator refers to a level less than 2 wt. %". Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include photoinitiators in amounts less than 2% by wt. as taught by the prior art and thereby obtain the invention.

It is also noted that the prior art teaches the functional equivalence of various cure mechanisms, i. e. preferred forms of radiant energy are ultraviolet (UV) and electron beam energy (column 5, lines 7-20, line 60-65). Given the functional equivalence of various cure mechanisms, it would have been obvious to one of ordinary skill in the art at the time the invention was made to accomplish the cure by electron beam radiation and thereby obtain the instant invention.

With regard to claims 6 and 8, it is noted that the independent claims 5 and 7 recite a at least one ethylenically unsaturated compound selected from the group consisting of a monomer and an oligomer and does not include mixtures thereof. Thus, claims 6 does and 8 do not add any further limitation to the independent claims.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri at (571) 272 1112.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached at (571) 272 1114.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Satyas*

SATYA SASTRI

July 5, 2006

*DW*

DAVID W. WU  
ADVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700